

## REMARKS

- Claims 29, 41, 50, 66, and 87 have been amended herein.
- Claim 94 has been added herein.
- Claims 29 - 37, 39 - 59, 61, 66 - 88, 90, 91, and 94 will be the only pending claims under consideration upon entry of this amendment.
- Claims 29, 50, 66, 87, 88, and 94 are independent.

### **Rejection of claims 29 - 36, 39 - 40, 43 - 48, 66 - 74, 76 - 78, 82 - 85, 88 and 90 - 91 under 35 U.S.C. §102(b)**

Claims 29 - 36, 39 - 40, 43 - 48, 66 - 74, 76 - 78, 82 - 85, 88 and 90 - 91 stand rejected under 35 U.S.C. §102(b) as unpatentable over US Pat. No. 5,510,093 to Bartz et al. (hereinafter "*Bartz*").

The Applicants have amended independent claim 29 to read, in pertinent part:

- v) an oxidant inlet adapted to introduce an oxidant into the central chamber, where the oxidant inlet is positioned to introduce oxidant through a path that does not pass through pores of the porous wall ~~for introduction of an oxidant for mixing with the gaseous waste stream.~~

Claim 29, as amended, clearly recites an oxidant inlet which is positioned to introduce oxidant into the central chamber through a path which does not pass through the pores of the porous wall. The *Bartz* reference, on the other hand, introduces all oxidant through the porous wall of the foraminous burner, and does not disclose or suggest any structure which is capable of introducing oxidant into the central chamber through any path which does not pass through the porous wall of the



foraminous burner. As such, *Bartz* fails to disclose or suggest all of the limitations of claim 29. Applicants submit that claim 29 is therefore patentable over *Bartz*. Claims 30 - 36, 29 - 40 and 43 - 48 each depend from claim 29, and Applicants submit that these claims are therefore also patentable over *Bartz*.

Independent claim 66 has been amended with the same language with which claim 29 has been amended. Applicants submit that claim 66, and claims 67 - 74, 76 - 78, and 82 - 85, which depend from claim 66, are also patentable over *Bartz*.

Applicants traverse the rejection of independent claim 88. Claim 88 recites: "wherein the porous ceramic wall includes pores shaped so as to provide passage of fluid into the central chamber defined by the porous ceramic wall while reducing backflow of any fluid or reaction products from the central chamber." In response to the office action mailed June 12, 2007, the Applicants pointed out that *Bartz* does not disclose or suggest pores which are intentionally shaped in any particular shape, let alone a shape which reduces backflow of any fluid or reaction products from the central chamber. The Examiner has responded by making the unsupported statement that "*Bartz et al.* discloses the porous ceramic wall with the same structural features as the claimed invention; therefore, the porous wall is capable of providing the fluid into the central chamber and reducing backflow of any fluid or reaction products from the central chamber." The Examiner, having failed to offer any evidence that *Bartz* discloses "pores shaped so as to provide passage of fluid . . . while reducing backflow of any fluid or reaction products" has failed to make a *prima facie* case of anticipation. In addition, the Examiner has not shown that the required shape is inherent in the porous material of *Bartz*. Applicants submit that as such, the rejection of claim 88, as



well as the rejection of claims 90 and 91, which depend from claim 88, should be withdrawn.

**Rejection of claims 41, 42, 49, 75 and 79 - 81 under 35 U.S.C. §103(a)**

Claims 41, 42, 49, 75 and 79 - 81 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Bartz*.

Applicants submit that, as claims 41, 42, 49, 75 and 79 - 81 depend from independent claims 29 and 66, which Applicants have shown above to be patentable over *Bartz*, claims 41, 42, 49, 75 and 79 - 81 are also patentable over *Bartz*.

In addition, with respect to claims 41 and 42, the Examiner argues that "it would have been an obvious matter of engineering choice to select an appropriate shape for the baffle, such as one having conical shape on the basis of its suitability for the intended use as a matter of obvious engineering choice and since such a modification would have involved a mere change in the shape of a component." The Applicants submit that the conical shape is not simply one shape out of many which would have been suitable for the intended use. Rather, the shape was chosen because it was effective to keep particulates from adhering to the sides of the chamber. The Examiner has not made a *prima facie* case of obviousness, because the Examiner has not even stated, let alone proved, that the non-conical baffle shape of *Bartz* is as effective as the claimed conical baffle at keeping particulates from adhering to the sides of the chamber.

With respect to claim 49, the Examiner states that "*Bartz et al.* '093 discloses the porous wall with apertures and it would have been obvious [*sic*] matter of engineering choice to provide various shapes of the apertures including conical shaped protuberances since it has been held in the art that a change in shape is within the level of ordinary skill in the art." The



conical shaped protuberances provide the benefit of injecting fluid into the central chamber to keep particulates from adhering to the sides of the chamber, while simultaneously preventing backflow from the central chamber into the interior space. The Applicants submit the Examiner has not provided any evidence whatsoever that the choice of "conical shaped protuberances" would have been obvious over the randomly shaped pores of *Bartz*.

Finally, with respect to claims 75, and 79 - 81, the Examiner states that "the apparatus of *Bartz et al.* is substantially the same as that of the instant claims, but is silent as to whether there may be more than one inlet." However, it would have been obvious to one having ordinary skill in the art to provide more than one inlet to facilitate in mixing the fluids in the apparatus of *Bartz* since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art." Applicants submit that the use of "a plurality of inlets adapted to deliver fluid along a length of an exterior surface of the interior porous wall," as recited in claim 75, is not mere duplication, but rather serves the real purpose of equalizing the pressure of fluid in the interior space so that the flow of fluid through the porous wall can be evenly controlled.

In light of the above arguments, the Applicants request that the rejection of claims 41, 42, 49, 75 and 79 - 81 be withdrawn.

**Rejection of claims 37, 50 - 59, 61, 86 and 87 under 35 U.S.C. §103(a)**

Claims 37, 50 - 59, 61, 86 and 87 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Bartz* in view of U.S. Pat. No. 6,187,080 to Ping-Chung, et al., (hereinafter "*Ping-Chung*").



Claim 37 depends from independent claim 29. The *Bartz* reference fails to disclose or suggest an oxidant inlet which is positioned to introduce oxidant into the central chamber through a path which does not pass through the pores of the porous wall. The *Ping-Chung* reference does not cure this defect. In fact, *Ping-Chung* does not disclose a porous wall, and so cannot disclose or suggest a oxidant inlet which is positioned to introduce oxidant into the central chamber through a path which does not pass through pores of the porous wall. For at least this reason, claim 37 is patentable over *Bartz* in view of *Ping-Chung*.

In addition, however, claim 37 recites "wherein the lower reaction chamber includes at least one oxidant inlet positioned to introduce an oxidant to the gas flow chamber." The oxidant introduced into the two stage reactor at this location supplies oxidant to complete the oxidation of the effluent. By the Examiner's admission, "*Bartz* fails to disclose a lower reaction chamber [which] includes at least one oxidant inlet positioned to introduce an oxidant to the gas flow chamber." The Examiner cites the gas-vortex means (37) of *Ping-Chung* as a cure for the deficiency of *Bartz*, stating that "it would have been obvious in view of *Ping-Chung* et al. '080 to one having ordinary skill in the art to modify the apparatus of *Bartz* et al. with at least one oxidant as taught by *Ping-Chung* et al. in order to minimize solid deposition in the outlet of the upper reaction chamber." The Examiner has misread *Ping-Chung*, in that *Ping-Chung* does not disclose an oxidant. The gas-vortex means is a device which creates a vortex which acts mechanically to keep solid deposition from the walls of the chamber. It does not introduce an oxidant which is used to complete the oxidation of the effluent. Thus, even if combined with *Bartz*, *Ping-Chung* would not cure the deficiency of *Bartz*.



Independent claim 50 has been amended herein to include the same features as claim 29 has been amended to include. As with regard to claim 29 discussed above, the *Bartz* reference fails to disclose or suggest an oxidant inlet which is positioned to introduce oxidant into the central chamber through a path which does not pass through the pores of the porous wall, and the *Ping-Chung* reference does not cure this defect. Thus, Applicants submit that claim 50, and claims 51 - 59, and 61, which depend from claim 50 are patentable over *Bartz* in view of *Ping-Chung*.

In addition, with respect to claim 51, the Examiner does not make a prima facie case that the waste gas inlet recited by the claim is disclosed or suggested in either *Bartz* or *Ping-Chung*. In fact, the Examiner does not address this feature at all.

In addition, with respect to claim 52, the Examiner uses the same argument which he used with respect to claims 41 and 42 to allege that the use of the conical baffle is obvious. Applicants submit that claim 52 is patentable for the same reasons that claims 41 and 42 are patentable.

In addition, with respect to claims 56 - 58, the Examiner states that the "[means] for introducing a fluid into the interior space is adapted to introduce water" is directed to the contents thereof during an intended operation and does not impart further structural limitation to the claimed invention." The Applicants disagree. Being adapted to introduce water is a structural feature of the means for introducing a fluid. The claim does not recite introducing water. The same remarks apply to being adapted to introduce steam in claim 58.

In addition, with respect to claim 59, the Examiner make the same error as with claims 56 - 58. Being adapted to introduce a fluid . . . under pulsing conditions, is a



structural limitation. It is not the same as introducing a fluid under pulsing conditions.

Claim 86 depends from claim 66, as claim 37 depends from claim 29, and recites a feature equivalent to the feature recited by claim 37. Applicants submit that the remarks made above with respect to claim 37 therefore apply equally to claim 86. As such, Applicants submit that claim 86 is patentable over *Bartz* in view of *Ping-Chung*.

Independent claim 87, like independent claims 29, 50, and 66, has been amended to recite an oxidant inlet which is positioned to introduce oxidant into the central chamber through a path which does not pass through the pores of the porous wall. The *Bartz* reference fails to disclose or suggest an oxidant inlet which is positioned to introduce oxidant into the central chamber through a path which does not pass through the pores of the porous wall, and the *Ping-Chung* reference does not cure this defect. Thus, Applicants submit that claim 87 is patentable over *Bartz* in view of *Ping-Chung*.

#### **New Claim 94**

New claim 94 recites, in pertinent part, "an interior porous wall, wherein the interior porous wall defines a central chamber, and wherein the interior porous wall is positioned from the outer exterior wall a sufficient distance to define an interior space, and wherein the interior space does not contain a fuel."



Neither reference discloses or suggests a structure wherein the space between the porous wall and the exterior wall does not contain fuel. Applicants submit that claim 94 is patentable over *Bartz* and *Ping-Chung*, individually and in combination.

### CONCLUSION

Applicants believe the claims are now in condition for allowance, and respectfully request reconsideration and allowance of the same.

Applicants do not believe a Request for Extension of Time is required but if it is, please accept this paragraph as a Request for Extension of Time and authorization to charge the requisite extension fee to Deposit Account No. 04-1696. Applicants do not believe any additional fees are due regarding this Amendment. However, if any additional fees are required, please charge Deposit Account No. 04-1696.

Respectfully Submitted,



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Dated: May 5, 2008  
Hawthorne, New York